



City of Seattle

Paul Schell, Mayor

Seattle Public Utilities

Diana Gale, Director

'98 SEP -8 P5:32

VIA FACSIMILE AND U.S. MAIL

WATER QUALITY
PROGRAM

September 1, 1998

Megan White, Program Manager
Water Quality Program
Washington State Department of Ecology
P.O. Box 47600
Olympia, Washington 98504-7600

Re: Third Year Report under Municipal Stormwater Permit No. WASM23003

This report is submitted by the City of Seattle pursuant to Special Condition S10 of the National Pollutant Discharge Elimination System (NPDES) and State Waste Discharge General Permit for discharges from municipal separate storm sewers for the Cedar/Green Water Quality Management Area. The report covers the 12-month period between January 1, 1997, and December 31, 1997, with updates as appropriate for the first six months of 1998.

I. STATUS OF STORMWATER MANAGEMENT PROGRAM COMPONENTS

All program components have been implemented and are proceeding in accordance with the City's Stormwater Management Program (SWMP), as approved by Ecology on July 24, 1997.

a. COMPREHENSIVE PLANNING PROCESS (S7.B.1 OF THE NPDES PERMIT):

The following components of the Comprehensive Planning Process include public participation and intergovernmental efforts to coordinate planning issues across city and county levels. The City's planning process currently includes:

Public Participation

Citizen Advisory Committees

Seattle Public Utilities has convened several citizens' advisory committees to review programs and emerging issues, and to forward recommendations to the Director of the Utility on key policy matters. A committee addressing creeks, drainage, and wastewater issues has been formed, and has been meeting monthly since April 1998. It is developing a work program that will include reviewing drainage policy issues, providing input into Seattle's stormwater management program pursuant to the City's NPDES permit for 2000 - 2005, and influencing urban creeks management strategies. A Business Advisory Committee has also been created, which also may address some of these issues as part of their program.

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Pipers Creek Watershed Action Plan Implementation Review Committee

In November of 1997, at the community's request, SPU convened a committee to review progress made under the 1990 *Pipers Creek Watershed Action Plan for Control of Nonpoint Source Pollution*, which was one of the first watershed action plans in the state approved by the Washington Department of Ecology. The committee includes representatives from the various agencies and community groups which were involved in creating the original plan. SPU also retained a technical consultant, who has reported back to the committee with analyses of water quality data and fish habitat data. SPU staff have produced a status report on accomplishments under the 1990 Plan. The committee is expected to complete a report describing the goals that have been accomplished and making recommendations for future action. In early 1999, the committee will be developing proposals for "course corrections" to the Watershed Action Plan.
David McDonald (206) 684-7650

Longfellow Creek Watershed Action Plan

Seattle Public Utilities is currently using the Longfellow Creek Watershed Implementation Grant, funded under Ecology's Centennial Grant program, as a vehicle to achieve four key goals in the Longfellow Creek Watershed Action Plan. These goals are: (1) improve habitat; (2) improve water quality and stormwater management; (3) increase public education and citizen involvement; and (4) improve and enhance public access. The goals form the basis for a set of 18 specific Action Plan recommendations, which range from removing barriers to fish passage to establishing an adopt-a-creek program. In addition to overseeing implementation of the four key goals, the Longfellow Creek Watershed Implementation Grant will also develop an erosion and sedimentation management program, enhance habitat and open spaces, and implement a targeted watershed education program. During 1997 and the first half of 1998, the watershed education program was successful in integrating community schools and volunteers with open space stewardship, relying in large measure on advocacy from the Longfellow Creek Advisory Council. During this same period, Longfellow Creek data were compiled and organized, mapped onto the GIS Creek layer, and used to evaluate existing conditions and to prioritize future work. Several technical memoranda were completed, including a document entitled *Potential Upland Sediment Sources in Longfellow Creek Watershed*. During the second half of 1998, these efforts will serve to support development of a Master Plan designed to address creek channel and upland problems. The Longfellow Creek Master Plan will focus primarily on rehabilitating salmonid habitat and improving the biotic community.
Ann Shoemaker (206) 684-7596

Thornton Creek Watershed Action Plan

In June 1997, the City and Ecology signed a \$400,000 loan agreement to develop a watershed action plan for Thornton Creek. Community groups, schools, and business leaders joined with representatives from local, state, and tribal governments to form the Thornton Creek Watershed Management Committee (WMC). This committee is developing an action plan with strong support from Seattle Public Utilities. To date, the WMC has developed a scope of work for the committee, a public participation plan and a decision making program. Under guidance from the WMC, SPU is working on a Background Characterization Report and a Water Quality Assessment. SPU has conducted numerous public outreach efforts as part of the Action Plan, including two newsletters, a five part lecture series held at the local community college, two

creek side work parties and a public meeting for stakeholders in the watershed. SPU contracted with Decision Data, Inc., a marketing research company, to conduct a telephone survey of watershed residents. Over 350 watershed residents participated in the watershed survey in May 1998. Residents were asked about local creeks, their perceptions of the creek, and their interest in protecting and restoring the creek. SPU and the WMC are currently working to identify problems impacting beneficial uses of the creek and on developing restoration goals.

Chris Woelfel (206) 684-7599

Intergovernmental Coordination

Household Hazardous Waste Program

Seattle participates in the Local Hazardous Waste Management Program (LHWMP) in King County by implementing a number of Household Hazardous Waste (HHW) public education and collection services. The Program provides numerous services for households and small quantity generators (SQGs) of hazardous wastes (as defined by WAC 173-303).

Among the longest operating HHW collection facilities in the U.S., Seattle's two HHW collection facilities served over 12,000 households in 1997, collecting 380 tons of materials for proper disposal. Suitable materials -- mostly latex paint and automotive products -- are collected and then given away to be used by the general public or by other City Departments; some latex paint, antifreeze, and motor oil are recycled; other products are properly disposed of as hazardous waste. In addition to the two HHW collection facilities, Seattle's solid waste Recycling and Disposal Stations collected 138 tons of used motor oil in 1997 for re-refining, as well as several tons of used oil filters and vehicle batteries for recycling. The annual operating cost for Seattle's HHW collection program is approximately one million dollars.

HHW collection facility staff are active community educators, both on and off site. The collection facilities sport colorful education shelters that are equipped with displays and brochures. Knowledgeable staff are available to field numerous questions from the public and to encourage waste reduction and safe handling practices. Staff also participate in public events, such as the Seattle Home Show, where they provided information to thousands of attendees. During 1997, Seattle launched a promotional campaign aimed at selected neighborhoods populated by multifamily and ethnic minority residents. The campaign grew from the results of customer data that were gathered, which showed disproportionate use of facilities among certain population groups in the region. As a result of direct mail, advertising in community newspapers, and contacting community organizations, staff are now speaking at more local meetings involving previously under-served populations.

HHW collection services are only one aspect of the City's program, which seeks to emphasize waste reduction and reduce exposure. SPU delivers several innovative programs, which reach several thousand people each year, through promotional measures and face-to-face activities. Examples include:

- ◊ Green Gardening program, involving nursery staff and master gardeners in educating the public about gardening practices which reduce chemical use, toxic runoff, and water use;

- ◇ Natural Lawns program, demonstrating resource-efficient and less toxic methods for maintaining healthy turf;
- ◇ Green Cleaning, distributing lower toxicity cleaning products and simple recipes for common household cleaning jobs.

In addition to these services, which focus on specific product types or uses, Seattle provides general customer education materials, such as the "Buy Safe" product comparison guide, which is currently translated into five languages. Concern about reaching all groups within the City's population drives professional market research and program refinement efforts. Seattle is currently leading a study of under-served populations as part of the LHWMP. The City is also continuing to participate in further performance reviews.

Shirli Axelrod (206) 684-7804

Interagency Regulatory Analysis Committee

Seattle Public Utilities regularly participates in the Interagency Regulatory Analysis Committee. The Surface Water Quality subcommittee meetings are also attended.

Monty McDaniel (206) 684-7790

NPDES Stormwater Permittee Interagency Working Group

The City of Seattle serves as the lead agency of the NPDES Permittee Interagency Working Group, whose members represent all the NPDES stormwater-permitted municipalities in the State of Washington. The Working Group meets regularly to discuss and coordinate stormwater management programs and NPDES municipal stormwater permit issues. In addition to Seattle, other member agencies include City of Tacoma, King County, Snohomish County, Pierce County, Clark County, Washington State Department of Transportation (WSDOT), and the Washington State Department of Ecology.

Robert Chandler (206) 684-7597

Lake Union Action Team

SPU currently chairs the Lake Union Action Team (LUAT), which was formed in 1988 as part of Ecology's Urban Bay Action Program. The goals of the Urban Bay Action Program include protecting ecosystems from further degradation, restoring damaged areas, and protecting the beneficial uses of the water body. The Lake Union Action Team is a multi-agency body that supports the goals of the Urban Bay Action Program by coordinating regulatory and source control efforts in the Lake Union drainage basins. Local, state and federal regulators involved with the Lake Union watershed meet on a bimonthly basis and sponsor a public forum once a year. In addition to SPU, regular attendees of the Lake Union Action Team include representatives from Seattle Parks and Recreation, Seattle Department of Construction and Land Use, King County Industrial Waste Program, King County Hazardous Waste Program, Port of Seattle, Washington State Department of Ecology Toxics Clean-up Program, Washington State Department of Natural Resources, Washington State Department of Fish and Wildlife, Washington State Department of Transportation, and the US Army Corps of Engineers.

Robert Chandler (206) 684-7597

University of Washington Center for Urban Watershed Management

SPU serves on the advisory panel for the Center for Urban Water Resources Management at the University of Washington, which is one of the region's best resources for research and education in stormwater management related topics. The Center has been involved in a number of projects over the years related to stormwater management, including research in constructed wetlands, lowland urban streams, sediment control from construction sites, and stormwater runoff BMPs. The Center is funded in part by support received from the Stormwater Technology Consortium, of which the City of Seattle is a member. Other members of the Consortium currently include: King, Snohomish, Spokane, Pierce, and Kitsap Counties, and the Cities of Bellevue, Olympia, Kent, and Everett. In 1997 SPU provided \$10,000 as a contributing member of the Stormwater Technologies Consortium.

Robert Chandler (206) 684-7597

b. STORMWATER MANAGEMENT PROGRAM PRIORITIES (S7.B.2 OF THE NPDES PERMIT):

A system for evaluating and prioritizing needs has been implemented. Details are contained in Chapters 3 - 8 of the SWMP. Examining unmet needs and developing actions to address them continues on an ongoing basis, with many of the results to be reflected in the City's SWMP for the 2000-2005 NPDES permit term. Among the issues being addressed are: (1) heightening enforcement posture for surface water quality complaint investigators; (2) improving construction site BMP inspections; (3) improving coordination between SPU and Seattle Transportation Department on drainage-related activities; (4) restructuring of business inspection/source control activities from watershed-based to industry activity-based approach; (5) making improvements to the current surface water quality monitoring programs; and (6) developing a comprehensive Stormwater Management Manual.

c. LEGAL AUTHORITY (S7.B.3 OF THE NPDES PERMIT):

Adequate legal authority to control discharges to and from Seattle's storm drainage systems has been established and is described in Appendices R-0 and R-1 of the SWMP.

d. MONITORING PROGRAM (S7.B.4 OF THE NPDES PERMIT):

Aquatic Community Assessment Program

In the fall of 1997, SPU collected macro-invertebrate samples from the substrate of the Seattle Streams listed below. SPU follows the protocol established by the University of Washington (UW), which allows the data to be used in the UW Benthic Index of Biotic Integrity (B-IBI), a matrix used to evaluate the data as a measurement of stream health. Sampling occurred 12 sites in 1997; four additional locations have been identified for sampling in 1998:

- Fauntleroy Creek - (upstream of SW Barton St & California Ave SW inside park)
- Little Creek * - (wooded area in Paramount Park, NE 147th & 9th Ave NE)
- Longfellow Creek - (trail/park area just north of SW Brandon St)
- Maple Leaf Creek - (upstream of Lake City Way)
- Pipers Creek - (downstream of the footbridge below the confluence of Venema Creek)

- Puget Ridge Creek - (upstream of culvert across SW Hudson St)
 - Ravenna Creek * - (wooded area northwest of playfield located at NE 55th St & 25th Ave NE)
 - Schmidt's Creek - (upstream of 57th Ave SW crossing)
 - Taylor Creek - (upstream of north culvert under Holyoke Way)
 - Thornton Creek * - (NE 130th St & 10th Ave NE, upstream of culvert)
 - Thornton Creek main branch - (downstream of Meadowbrook Pond outlet)
 - Thornton Creek main branch - (upstream of culvert under NE 105th St and 40th Ave NE)
 - Thornton Creek south branch - (Maple Leaf Creek) (upstream of culvert under Lake City Way at NE 98th St)
 - Venema Creek - (upstream of NW Carkeek Park Rd.)
 - Venema Creek - (downstream of the rearing pond)
 - Willow Creek * - (upstream of Weight Watchers building, near NE 91st St)
- * Site to be added in 1998.

Chris Woelfel (206) 684-7599

Storm Event Monitoring

SPU teamed up with the Puget Sound Keeper Alliance (PSA) to conduct a pilot volunteer stormwater sampling program for Longfellow Creek by providing funds and sampling supplies. Approximately ten volunteers were recruited to collect grab stormwater samples from five locations. The samples were analyzed for temperature, pH, dissolved oxygen and fecal coliform. Volunteers collected sixteen samples during the 1997/98 winter season. Six stormwater grab samples resulting from 4-hour storm events were taken in Seattle creeks by volunteers during January 1997 - July 1998.

Table 1 - Volunteer Storm Event Monitoring Sites

DATE	SITE	LABORATORY
10/1/97	SW Myrtle St.	North Creek
10/1/97	SW Thistle St.	North Creek
10/8/97	SW Kenyon St.	North Creek
10/8/97	SW Yancy St.	North Creek
12/15/97	SW Kenyon St.	Laucks
1/5/98	SW Willow St.	Laucks
1/6/98	SW Thistle St.	Laucks
1/23/98	SW Thistle St.	Laucks
1/28/98	SW Kenyon St.	Laucks
1/29/98	SW Willow St.	Laucks
2/12/98	SW Kenyon St.	Laucks
2/12/98	SW Thistle St.	Laucks
2/17/98	SW Thistle St.	Laucks
2/25/98	SW Willow St.	Laucks
3/9/98	SW Thistle St.	Laucks
3/10/98	SW Kenyon St.	Laucks

Chris Woelfel (206) 684-7599

Thornton Creek Sampling Plan

In order to address concerns regarding dissolved oxygen (DO) and temperature levels in Thornton Creek, SPU has developed a sampling and analysis plan for Thornton Creek Summer base flows. The concerns were raised by the Thornton Creek Water Quality Assessment conducted in 1998, which indicated that sampling for DO in creeks may not occur during the time of day at which DO concentrations might be expected to be at their lowest levels. The sampling plan is designed to measure three variables: temperature and dissolved oxygen levels on hot summer afternoons, and fecal coliform levels during baseflows. In this way, it will be possible to evaluate the extent to which temperature and dissolved oxygen may be limiting factors for fish in various segments of the creek. Fecal coliform counts at multiple sites along the creek will help determine whether high fecal coliform counts are a systemic problem or one limited only to specific sections of the creek.

Chris Woelfel (206) 684-7599

BMP Effectiveness Monitoring

The City of Seattle is a participating agency in the Lake Union Ultra Urban Stormwater Control Measure Test Facility, which is a project designed to evaluate structural best management practices (BMPs) that remove pollutants from stormwater runoff. With Washington State Department of Transportation (WSDOT) serving as the lead agency, this project will route highway runoff from a section of Interstate 5 into a test facility located in WSDOT right-of-way under I-5 immediately north of the Lake Washington Ship Canal. The runoff will be piped into as many as four installed BMPs (e.g., swirl technology-based units, filtration-based units, oil water separators), with sampling ports located so that flow rates and chemical concentrations can be determined at entry and exit points in each BMP. After leaving the structure(s), flow will be collected again into a common pipe, routed through a permanently installed BMP to remove or reduce suspended particles, oils, grease and other potential contaminants, before being discharged into the Ship Canal. This is expected to be a long-term monitoring and research project partnership between WSDOT and the City of Seattle for evaluating BMP efficiencies, operating procedures, and maintenance costs. Other participants in the initial project include the Environmental Technology Evaluation Center (ETEC) of the Civil Engineering Research Foundation (CERF), Concurrent Technologies Corporation (CTC), and the Center for Urban Water Resources Management (CUWRM) at the University of Washington.

Robert Chandler (206) 684-7597

e. INFORMATION SUPPORT PROGRAM (S7.B.6 OF THE NPDES PERMIT):

The City's Information Support program has been implemented per Section 10.6 of the SWMP. The City is committed to maintaining and updating its GIS system throughout the term of the permit and beyond. The City continues to maintain its system of 17 rain gauges and retains all records associated with precipitation, water quality, water quantity, and structural BMPs as required by the permit.

Surface Water Quality Database

SPU staff maintain a Microsoft Access database of all surface water quality complaint investigations, source control business inspections, and monitoring data. This database is updated and backed up weekly, and is stored indefinitely. The surface water quality database is accessible to all SPU staff.

Linda Gardner (206) 386-4024

GIS Support

The City of Seattle's operational Sewer and Drainage GIS layer contains over two million pipe records representing all mainline, ditch, culvert and customer service connection pipes. While this layer is used for all major mapping projects, the primary focus at this time is to phase out the old manually drafted side sewer cards. This is the final step in moving to a fully automated system for all sewer/drainage inventory and mapping needs.

Other active projects which affect the inventory of mapped infrastructure include:

- Ditch/Culvert Mapping: a team of interns using GPS technology are helping to develop a city-wide ditch and culvert layer which will integrate with the main sewer and drainage pipe layer. This project is approximately 30% complete and should be finished during the second quarter of 1999.
- CSO and Pump Station Data Integration: both CSO and Pump Station data have been created and used for mapping purposes. The next step is to integrate both of these data sets into the main sewer/drainage pipe layer for on-going maintenance and quality control processes. This step is expected to be completed by September of 1998.

Harvey Kocher (206) 233-0028

Precipitation Monitoring:

Currently, there are 17 stations in the city. Station #7 was repaired in January 1998 after being down for all of 1997. No major upgrades were performed in 1997/1998. No major expenditures or major maintenance was performed in 1997/1998. Table 2 provides average monthly rainfall accumulation.

1997 Statistics

Average Annual Accumulation: 39inches

Table 2 - Average Monthly Accumulations in inches:

Jan	4.39	Jul	1.05
Feb	1.52	Aug	1.22
Mar	6.44	Sep	3.05
Apr	4.13	Oct	5.63
May	2.92	Nov	3.55
Jun	2.83	Dec	2.35

Brian Rahal (206) 684-4615

f. RUNOFF CONTROL FROM NEW DEVELOPMENT (S7.B.8.a OF THE NPDES PERMIT):

Department of Construction and Land Use Inspection Services Division

The Department of Construction and Land Use's (DCLU's) Inspection Services Division (ISD) inspects and enforces the Erosion and Sedimentation Control (ESC)/BMP requirements of private development construction projects. ISD has nine regular building inspectors whose duties include ESC/BMP construction inspection for all BMP project categories. In addition, one inspector is assigned specifically to construction projects in Environmentally Critical Areas (ECA). The nine regular building inspectors are divided into North and South teams. Each team has a supervisor whose duty, among many other things, is to facilitate field problem resolution. There are two structural building inspectors who may become involved in particularly sensitive ESC/BMP problems and complaints. Contractors of all projects in ECA sites are required to set-up a pre-construction conference with the DCLU inspector. The project's ESC/BMP plans are discussed in the pre-construction conference.

DCLU issues permits under five project categories. Category 1 and Category 2 permits include almost all single family residences and duplexes, some additions and alterations, and many new commercial buildings. Category 3 permits include all of the above noted project types, but also require a grading permit due to additional cut and fill. Category 4 includes projects over 9000 square feet of developmental area. Category 5 permits are those projects that meet all the requirements for Category 4, but which also require a separate NPDES construction activities permit from Ecology. The details required in BMP planning for projects vary by the project category. A one-page Construction BMP Checklist is required for Categories 1 and 2. Category 3 requires more specific BMP details by applicants as part of the site or grading plan, and Category 4 projects require a separate detailed BMP plan prepared by a civil engineer. Permitting and inspections for Category 5 projects are the responsibility of Ecology.

DCLU issued about 1500 BMP Category 1 and 2 permits in 1997. These included almost all single family residences and duplexes, some additions and alterations, and many new commercial buildings. BMP Category 3 permits, which include all of the above noted project types but which require a grading permit due to additional cut and fill, numbered about 900 in 1997. BMP Category 4 projects, which include projects over 9000 sq. ft. of developmental area, numbered 117 in 1997; this number includes a handful of BMP Category 5 projects.

The sequence of a building inspector's site visits is set by the types of inspections required. The inspections occur at the request of the contractor. Typically, an inspector will not view the site's ESC/BMP until the foundation inspection. Inspectors will not enforce ESC/BMP details that are not included in the approved project plans. This essentially means that ESC/BMP requirements of BMP Category 1 and 2 projects are not directly enforced and BMP Category 3 and 4 projects are not inspected until after site grading and excavation to the foundation base is completed. Exceptions to this occur as a result of a complaint, on grading-only projects, and projects in an ECA Geologic Hazard Area. According to the DCLU time records program, building inspectors spent 182 hours in 1997 inspecting non-ECA construction ESC/BMPs. The ECA site inspector

spent 401 hours in 1997 inspecting ECA sites; her ESC/BMP inspection are included in these hours.

DCLU will require an applicant to contract with a Geotechnical engineer for ESC/BMP Special Inspection if the project includes construction in an ECA Geologic Hazard Area. The Geotechnical engineer is required to submit daily reports to DCLU during ESC/BMP component construction and include the status of the ESC/BMP components in all subsequent reports throughout the project. There were 225 ESC/BMP Special Inspections projects in 1997. Grading in Geologic Hazard ECA sites is limited to a period from May through October unless otherwise approved by DCLU's Geotechnical Engineer. A Special Inspection site is also a Category 1, 2, 3, or 4, so the number 225 is not separate from the category numbers noted above.

DCLU is redefining its organizational assumptions, including the traditional separation of the review function from the inspection function. This effort includes bringing new construction erosion control review and inspection under one roof in the Site Development Services group. The 1999 budget adds three new full time employees in Site Development Services (SDS)—two geotechnical engineers and one civil engineer. Additionally, through hiring and/or moving, three inspectors will join a reorganized SDS. The new SDS, which may or may not be renamed, will have review and inspection responsibilities for new private construction erosion control. ECA review and inspection and Landslide Policies overview will also be moved into SDS.

Kevin Donnelly (206) 684-5051

g. TREATMENT AND SOURCE CONTROL MEASURES (S7.B.8.B OF THE NPDES PERMIT):

Per section WQ-3 of the SWMP, treatment and source control measures have been implemented. The source control measures discussed in this section are business BMP inspections and specifically targeted industry inspections.

Business BMP Inspections: Program Development

The business inspection program is designed to reduce potential sources of water pollution through encouraging the use of good housekeeping and other BMPs. SPU is in the process of shifting from a geographical focus (e.g., Duwamish River watershed) to an industry-specific focus (e.g., automotive related businesses). Until now, SPU has conducted business inspections as part of a larger effort, usually funded by Centennial Clean Water grants, to study a specific watershed, improve city maintenance practices and educate businesses on what they can do to protect water quality. After efforts in the Thornton Creek watershed have been completed, this program will focus on an industry-specific approach in order to better utilize limited staff resources to target businesses of "most need," that is, those most likely to impact water quality if best management practices are not followed. Examples of these sorts of high priority businesses include sand and gravel yards, foundries, car wash establishments and auto repair shops.

Linda Gardner (206) 386-4024

Business BMP Inspections: Elliott Bay

SPU staff conducted over 200 business inspections in the Elliott Bay/Duwamish River study area prior to July 1st, 1997. Since this time, staff have re-visited eighteen businesses to assess compliance with earlier recommendations and offer additional assistance.

Linda Gardner (206) 386-4024

Business BMP Inspections: Thornton Creek Watershed

SPU has recently expanded its source control program to include the Thornton Creek Watershed, an 11 square mile, heavily urbanized area located in the north end of Seattle. Approximately two-thirds of the watershed are located within the City of Seattle with the remainder located in the City of Shoreline. Based on a review of Standard Industrial Classification (SIC) codes, staff have identified over 700 businesses within the watershed which have a high potential to pollute stormwater. Businesses in this category may work or store equipment outdoors, operate fleets, or have large quantities of liquids on-site. Staff have begun conducting an initial assessment of on-site activities to determine which of the 700 or so businesses do indeed perform the high risk activities just described. These businesses will receive an on-site inspection from SPU water quality staff. Staff will meet with the owner/manager, tour the site, identify potential sources of pollutants to the storm system and recommend Best Management Practices. The initial assessment phase of on-site activities is scheduled to be completed by the beginning of November 1998.

Linda Gardner (206) 386-4024

Industry Specific Business Inspections

In May 1997, the water quality team conducted a "car wash sweep" in the Lake City area, to address numerous complaints about soap suds in Thornton Creek. The Lake City area has many new and used car lots, automotive repair facilities, car washes and fleet operators. Many owners/managers routinely wash cars and allow the soapy runoff to discharge to the creek. Staff spoke with the owners/managers of more than 42 facilities regarding car wash practices and ways to reduce the amount of soap that enters the storm drain. Staff also worked with Northgate Mall to enforce a stricter "No Soap" policy for used car and RV sales events held on the mall's south parking lot.

Linda Gardner (206) 386-4024

h. OPERATIONS AND MAINTENANCE OF STORMWATER FACILITIES (S7.B.8.c OF THE NPDES PERMIT):

As part of the reorganization of several Seattle departments, SPU Drainage and Wastewater Operations Division is now responsible for drainage system maintenance for culverts, pipes, inlets, catch basins, sand boxes, trash racks, and ditches (mowing and clearing debris). The following tables describe the different activities the Operation and Maintenance department took care of over the last 18 months.

Table 3 - 1997 Quarterly Totals

Main Line Cleaning	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total lineal feet
Hydrocut	51,436	58,434	61,609	89,585	261,064
Machine Rodded	42,488	43,289	81,707	82,425	249,909
Jet Cleaning	63,197	67,426	112,174	103,243	346,040
Dragged Roots	-	-	2,348	7,167	9,519
Drag Sand /Gravel/Debris	-	-	-	620	620
				total	867,152

Main Line TV Inspection	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total lineal feet
TV Line	17,562	17,637	18,149	11,217	64,565
Mini Camera Inspection	1,595	1,086	375	436	3,492
Tractor TV Line	77,003	106,060	126,546	109,475	419,084
				total	487,141

Table 4 - 1998 First Two Quarter Totals

Main Line Cleaning	Quarter 1	Quarter 2	Total lineal feet
Hydrocut	80,291	106,822	187,822
Machine Rodded	93,049	107,231	200,280
Jet Cleaning	90,015	102,688	192,703
Dragged Roots	-	15,245	15,245
Drag Sand /Gravel/Debris	52	476	528
		total	596,578

Main Line TV Inspection	Quarter 1	Quarter 2	Total lineal feet
TV Line	15,401	13,966	29,367
Mini Camera Inspection	217	2,740	2,957
Tractor TV Line	108,606	156,904	265,510
		total	297,834

Table 5 - 1998 Drainage Maintenance

Activity	Quarter 1	Quarter 2
Mechanical Clean-Catch basin/Sand box	2,297	3,658
Manual Clean Inlets	4,830	4,964
Power Rodding	2,590 lineal feet	1,214 lineal feet
Inspect Catch Basin/Sand Box	7,043	8,537
Repair/Replace Drain Structure	-	90
Auger Ditch Cleaning	-	64,933 lineal feet
Maintain Ditches	43,195.5 lineal feet	103,092 lineal feet
Closed circuit TV Inlet/Outlet Pipes	-	118 lineal feet
Clean Settling Basins/Ponds	45	60
Jet Cleaning	17,419 lineal feet	18,792 lineal feet
Clean Bridge Drains	1,045	530
Hydrocut	212 lineal feet	216 lineal feet

Gary Lockwood (206) 684-7750

I. OPERATIONS AND MAINTENANCE OF ROADWAYS (S7.B.8.d OF THE NPDES PERMIT):

SEATRANS Street Maintenance Division has a staff of approximately 80 field and management personnel involved in street sweeping, de-icing. The City has ten sweepers that follow a schedule (weather permitting) of cleaning public streets and roads. Industrial and commercial areas are regularly swept on a rotating basis. Bike paths are cleaned once a month. In addition, roadways known to receive a significant number of leaves falling from trees received repeated visits during autumn. Street cleaning crews also respond to emergency calls, such as when sand has been used to contain a large oil spill. During winter, the City uses both sand and deicing liquids to aid traffic during freezing weather. Street Sweepers are used to pick up any remaining sand after it is no longer required. In 1997, there were approximately 28,000 curb miles of streets swept. Litter control is the responsibility of the SPU Community Services Division, which coordinates a number of volunteer programs to help keep the City's roadways clean, such as Adopt a Street, and Neighborhood Cleanup and Spring Clean.

Table 6 - 1997 expenditures for Street Maintenance include:

Mechanical sweeping	\$1 million (approx.)
Street flushing	\$34,000
Alley flushing	\$145,000
Snow & ice response	\$180,000

Don Gatchalian (206) 684-5319

j. WATER QUALITY CONSIDERATIONS IN SPU'S CAPITAL IMPROVEMENT PROGRAMS (S7.B.8.e OF THE NPDES PERMIT):

In 1997, Seattle constructed several Capital Improvement Program (CIP) projects that included water quality elements. Although some of these were actually completed in 1998, the majority of work was done in 1997.

- Meadowbrook Pond - \$5.5 million. Wet detention pond with wetland, presettling basin, and creek channel improvements to promote fish passage and enhance habitat.
- Jackson Park Golf Course Detention - \$1.5 million. Wet detention pond with wetland plantings along edge.
- Thornton Creek North Branch Detention - \$1.4 million. Detention pond and open creek channel to replace storm drain.
- North Seattle Community College Detention - \$0.9 million. Constructed wetland with oil/water separator and settling basin at entrance.
- West Seattle Freeway Oil/Water Separators - \$200,000. Improvements to large existing structures to facilitate access and maintenance.

Neil Thibert (206) 684-7589

k. REDUCTION OF PESTICIDES, HERBICIDES, AND FERTILIZERS (S7.B.8.f OF THE NPDES PERMIT):

Green Gardening Program

Begun in 1993, Green Gardening is a program developed by the Seattle Public Utilities and funded by the Local Hazardous Waste Management Program (LHWMP). Green Gardening seeks to educate all King County residents about alternative pest management strategies in an effort to reduce pesticide use. All Green Gardening activities are designed and implemented by the consultant team of the Seattle Tilth Association, Washington Toxics Coalition and Washington State Cooperative Extension, King County. Program budget in 1997 was \$75,000. In 1997-1998, the Green Gardening consultant team completed eight primary tasks:

1. Developed curriculum and trained staff at ten local garden centers and six Eagle Hardware garden departments, and horticulture students at three colleges about less-toxic pest control methods, to help them educate their own customers.
2. Wrote a series of seven articles for the Practical Gardener column of the *Sunday Seattle Times* (circulation 500,000), highlighting alternative pest management strategies.
3. Made Green Gardening presentations to 41 groups in King County, reaching an audience of over 1100 people.

4. Taught a Green Gardening curriculum as part of the regional Washington State University (WSU) Extension Master Gardener program and presented it to 99 Master Gardeners. Trained 11 Master Gardeners to give Green Gardening slide show presentations in King County.
5. Presented a one day training for professional groundskeepers on successful integrated pest management (IPM) strategies, which attracted 217 participants representing more than 25 public agencies and additional private landscaping companies. This workshop was designed as part of the City of Seattle's own pesticide recertification training.
6. Designed and produced a new series of fact sheets on alternative pest control for professional landscapers called *Pro IPM*. These fact sheets describe how to identify and manage eight of the most common Pacific Northwest garden pests using an IPM strategy.
7. Printed 30,000 and distributed over 24,000 copies of the four Green Gardening educational brochures. Some examples are enclosed.
8. Circulated two informational displays on Green Gardening techniques to eight libraries and several public events in King County, distributing over 5,000 brochures.

Carl Woestwin (206) 684-4684

1. ILLICIT DISCHARGES (S7.B.8.g OF THE NPDES PERMIT)

Investigation of illicit discharges and improper disposal of materials to surface water are handled by the surface water quality team as part of their investigations program (See Section 5.b.)

Between January 1997 and July 1998, two illicit sanitary waste connections to the city's stormwater conveyance system were identified. One of these illicit connections has been repaired and repairs to the other are pending. Three illicit direct discharges by businesses to Puget Sound were also investigated, and repair to these systems requested. Further action was transferred to the Department of Ecology, the lead agency for direct discharges to Puget Sound.

m. CONTROL OF INDUSTRIAL DISCHARGES INTO MS4s (S.B.8.H OF THE NPDES PERMIT):

As part of the City's Water Quality Source Control, Complaint Investigation, and Monitoring Program, any evidence of stormwater contamination is investigated by the Surface Water Quality Team (see Sections 1.g, 1.l, and 5.b.)

2. CHANGES IN PERMIT COVERAGE AREA:

There were no changes in permit coverage area in 1997 and none are anticipated in 1998.

3. EXPENDITURES FOR COMPONENTS OF STORMWATER MANAGEMENT PROGRAM (S7.B.5):

In accordance with Section S9 of the permit, a permit modification is required if there is a greater than 20-percent difference between the *projected* annual budget values contained in the City's SWMP (Table 9.7 in the SWMP) and the actual budget *adopted* by the City Council. Stormwater budgets for 1997 and 1998 had already been adopted by the time the City's SWMP received final approval by Ecology, and therefore comparisons between projected and adopted budgets cannot be provided for these years. Table 3 shows the adopted and projected overall stormwater management program budgets for the remaining term of the permit. Table 3 also shows expenditures for 1997, the sum of which was lower by 5.11% from the adopted value.

Table 7 - Overall Stormwater Management Program Budget

Category	Adopted	Actual	Adopted	Projected	Projected
	1997	1997	1998	1999	2000
Stormwater Management Programs ¹	\$2,441,326	\$2,972,341	\$2,481,200	\$2,555,636	\$2,632,305
Drainage and Wastewater Operations Division	\$2,690,598	\$2,115,594	\$3,066,423	\$3,158,416	\$3,253,168
Total Annual Budget	\$5,361,729	\$5,087,935	\$5,547,623	\$5,714,052	\$5,885,474

¹ Includes Regulatory, Water Quality, and Public Involvement & Education programs. Category was formerly titled "Resource Planning Division (Drainage-Related)" in Table 9.7 of SWMP.
 Trisha Erickson (206) 684-8082

4. REVISIONS TO FISCAL ANALYSIS

There are no revisions to fiscal analysis to be presented at the time of this report. The City is currently preparing its budget for the 1999-2000 biennium. There are indications that the adopted budgets for the 1999-2000 biennium may be larger than the projected values provided in the SWMP (Table 9.7), possibly by more than 20-percent. Once the biennial budget receives final Council approval, the City will determine the revised value for its overall stormwater management program budget and notify Ecology accordingly if a permit modification is required.

5. COMPLIANCE ACTIVITIES

In the interest of monitoring and ensuring the success of the SWMP, the City conducts enforcement actions, inspections and investigations of businesses throughout its jurisdiction.

a. ENFORCEMENT ACTIONS

The Surface Water Quality Team has continued to pursue a policy of public awareness and education. Staff rely on a combination of site visits, telephone contacts, and follow-up letters to educate drainage code violators about best management practices to protect water quality, while

informing them that they may be breaking city drainage codes. Historically, SPU has not pursued the civil penalties section of the City's 1995 Stormwater, Grading and Drainage Code. (This code specifically prohibits the discharge of certain materials into the storm drain and lays out the civil penalties for violation of the code.) During the last year, surface water quality staff have met with the City's Law Department to develop a process to issue "STOP WORK orders," as well as a Notices of Violation (NOV) for drainage code infractions. The NOV process is the first step in assessing monetary penalties. A protocol for enforcement activity is also being developed.

Linda Gardner (206) 386-4024

The Department of Construction and Land Use issued nine Notices of Violation for grading without permit, and five were issued for tree cutting in a critical area. In the first six months of 1998, eight notices were issued for grading and seven for tree cutting in critical areas.

Dianne Kelso (206) 684-8420

b. INVESTIGATIONS

SPU relies on citizens to spot and report potential surface water problems, and SPU water quality field investigators respond to water quality-related complaints within the City limits. The complaints originate from two sources: citizens (via the 684-PKUP line) and referrals from other departments and agencies. An internet online complaint form is being developed. When the team responds to a complaint, every attempt is made to determine the responsible party and stop the action that is polluting the surface water. Staff also provide information on clean up, alternative disposal options, erosion control and other best management practices. If practical, the responsible party is required to clean up the material. When necessary, the field crew requests that streets be swept, catch basins pumped out, or other remediation be taken by City maintenance crews.

SPU water quality investigators responded to 284 surface water quality complaints during January 1997- June 1998. Staff conducted on-site investigations at 209 sites. The most frequently reported pollutants were automotive fluids (particularly motor oil), paint, and soap. Staff resolved 267 (98%) of the complaints. Three cases are still on-going and three could not be resolved. As part of the resolution process, letters were sent to more than thirty alleged violators. Staff referred twenty-nine cases to other departments or agencies, such as Seattle Police Department, SPU Illegal Dumping and SPU Drainage and Wastewater Operations, SEATRANS Street Use Department, Seattle Department of Construction & Land Use, the U.S. Coast Guard, Ecology, EPA, and King County. Referrals are counted as "resolved" investigations by SPU.

Linda Gardner (206) 386-4024

c. INSPECTIONS

Business inspections

(See 1 g for details on this aspect of the source control program)

Side Sewer Connections

SEATRANS Street Use issues permits for side sewer connections in the Seattle area. There were 1,090 permits issued between the 1st of January 1997 and 31st of June 1998. There are nine inspectors currently working at Street Use. The funds collected through drainage permits during this period were \$366,213.

Private stormwater detention system inspections

The private stormwater detention system inspector position was filled with a full-time permanent employee in late January 1998. Between February 1998 and the end of June 1998, 180 initial inspections and 92 re-inspections of stormwater detention systems have been completed in the Thornton Creek Watershed. There have been 634 catch basins and 76 flow control detention structures inspected; this represents approximately two-thirds of the total number to be inspected in this watershed. Broken down into land use type, stormwater detention system inspections have been: 48% commercial businesses, 34% apartments, 7% condominiums and townhouses, 3% churches, 3% schools, 3% single family residences, and 2% public buildings. Upon initial inspection, 20% of the sites are appropriately maintained and not in need of repair, while 80% are in some way deficient. Initial compliance with SPU requests for maintenance and/or repair (defined as having completed requested maintenance within 60 days after initial letter and report) has been approximately 60%. The most common sort of maintenance needed is catch basin cleaning. When all the dirty catch basins and vaults so far identified have been cleaned out, approximately 126 tons of sediment will be removed.

Laura Reed (206) 615-0551

d. PUBLIC EDUCATION ACTIVITIES (SECTION S7.B.8.I OF THE NPDES PERMIT)

Salmon in the Classroom

SPU continues to sponsor water quality education programs in 105 Seattle schools. The Salmon in the Classroom program helps schools raise salmon fry from eggs. Each spring, approximately 10,000 salmon fry are planted in to local creeks. SPU's ongoing partnerships with Seattle Public Schools, University of Washington School of Fisheries, Burke Museum, Washington State Department of Fish and Wildlife, Seattle Aquarium, King County, and Seattle Department of Parks and Recreation help teach students about the salmon life cycle, community watershed stewardship, natural habitat, and why it is important to protect our water resources.

Carlton Stinson (206) 684-7624

Green Gardening Program

(refer to section 1.k)

The Water Quality Consortium

The mission of the Water Quality Consortium is to allow government agencies to pool resources in order to carry out a mass media campaign. A campaign was designed to motivate and educate large numbers of citizens to take specific actions that will protect the water resources of the Puget Sound region. Two television and four newspaper advertisements were developed. The total cost of the campaign exceeded \$1 million. In order to determine whether or not the campaign was successful, 600 post-campaign interviews were conducted. There were 300 interviews conducted with King County residents, 200 with Pierce County residents, and 100

with Snohomish county residents. The overall statistical reliability of this survey is +/- 4% at a 95% confidence level. Pre-campaign and post-campaign surveys yielded the following results: (1) There was a 15% increase in those citing water pollution as the most important environmental issue to the Puget Sound region, (2) 33% of people questioned had unaided recall of a Water Consortium ad encouraging a reduction in fertilizer use, and (3) 35% of respondents who could recall the ads stated that the ads had caused them to change their behavior in some way. In addition, respondents stated that they would be willing to pay an average of \$4.00 more per month in higher sewer rates or taxes to help improve water quality in the Puget Sound region. A copy of the report is enclosed.

Rich Gustav (206) 684-7591

Storm Drain Stenciling Program

The Storm Drain Stenciling Program continued in 1997 with no major changes. The message stenciled above the storm drain reads "Dump no Waste, Drains to [Stream, Lake, Bay]." The following table summarizes the year's activities throughout the city:

Table 8 - Storm Drain Stenciling

Community Group	No.	Community Group	No.
City-wide Community businesses	250	Seward Park	107
UW Environmental Health & Safety Dept.	175	Seattle Schools(Salmon in the Classroom)	991
Pipers Creek	68	Seattle Pacific University City Quest	425
Queen Anne	57	Port of Seattle	37
		West Seattle P. C. C.	123
		Total	2,333

S.T.E.P. and Quick S.T.E.P.

S.T.E.P.

SPU created a program for distributing small grants called Stewardship Through Environmental Partnerships (STEP) to provide financial and technical assistance to community groups interested in taking action to help protect and improve local waters. Special funding has been made available to SPU under the auspices of the King Conservation District. Through STEP, SPU is assisting community groups, schools, youth organizations, employee groups, and business organizations with projects and activities that will improve and protect surface water resources. STEP funds are available for stream bank restoration, bank stabilization, wetland restoration, informational brochures, restoring native vegetation, creating urban gardens, and cleaning or planting vacant lots. Applicants can receive assistance for many materials or services to help complete projects. Examples include: tools, plants, printing of educational materials, community outreach, and graphics. Seventy thousand dollars are available in grants each year. An informational pamphlet is enclosed.

Quick STEP

SPU also supports an accelerated grant program for community groups, schools, and employee groups that need up to \$1,000 for special events. This fund is designed to encourage groups of neighbors and the under-served populations of the City who have limited time and technical resources to do special one day events in their community to protect water quality or educate their community about non-point pollution issues that impact our lakes and streams.

STEP & Quick-STEP 1997-98

SPU has funded 16 new project throughout the City in 1997-98. There was a variety of projects from education to habitat restoration. Eight of the projects were funded through our original STEP fund that gives groups up to \$5,000 of materials and assistance. The other eight were funded through Quick-STEP. SPU has provided a total \$29,973.52 in STEP assistance and \$6,718.67 through Q-STEP for a grand total of \$36,692.19, plus in-kind of printing and technical expertise. Funding totals for 1997 were \$20,413.23. Funding totals for 1998 were \$15,279.67. An informational pamphlet is enclosed.

Table 9 - Stewardship Through Environmental Partnership

S.T.E.P.	Funding Amount:
<i>Streets to Sound</i> is an urban watershed education project involving middle school students from Pacific Crest School and the Greenwood Community. The chief goal of the project was to help the Community understand the connections between the watershed that they live on and the water quality of Piper's Creek and Puget sound.	\$2930
<i>Thornton Creek Corner Bank Stabilization Project</i> is a partnership funded by Department of Neighborhoods Small & Simple grant and STEP. The project was done on a street right-of-way at 40 th NE 105 th street. Neighbors came together to mitigate active erosion of the natural sloped area. The neighbors installed a tree revetment and replanted the bank with native plants better suited for erosion control, redirecting creek flows in that portion of Thornton Creek.	\$871.92
<i>Greenwood-Palatine Peek at the Creek Restoration Project</i> restored a small tributary of Piper's Creek by cleaning up the creek bed and corridor to prevent further erosion and reduce some of the stormwater runoff from collecting on adjacent property from a nearby hillside and installed low maintenance plants to this natural Piper's Creek tributary. <i>Department of Neighborhoods: \$4,900</i>	\$1500
<i>Greenlake Habitat Enhancement</i> is a three phase project to enhance and restore bird and wildlife habitat, reintroduce native plants to reduce erosion and protect water quality on the north shoreline of Greenlake Park. <i>Department of Neighborhoods: \$7,125</i>	\$3657.60
<i>Restoration Of Upper Colman Park</i> project restored and enhanced the parks eroding drainage system. This included the re-establishment of existing surface water run-off swales and adding two collecting ponds and the establishment of a native wetland plant community as a bio-filtration system.	\$10,000
<i>Loyal Heights Drainage Restoration</i> project is a partnership between DON, Loyal Heights Elementary, and SPU as one of the Greening of Schools projects, to remove a section of asphalt from the playground to provide a safer play area and natural surface for drainage to occur.	\$1,453
<i>Greening of Arbor Heights project</i> eliminated 2500 square feet of asphalt and created a natural perimeter for stormwater runoff.	\$4,561
<i>TREEmendous Seattle</i> used STEP funds to extend its outreach from 800 potential stewards to 2000. The Utility receives ad space for a year to educate their readers and solicit grantees.	\$5,000
total	\$29,973.52

Table 10 - Quick S.T.E.P.

Quick S.T.E.P.	Funding Amount
Seattle Public Schools Earthday clean-up	\$1,000
Thornton Creek Watershed Atlas	\$1,000
Student Conservation Association	\$879.55
B.F. Day Elementary Earthday with Puget Consumers Coop and Fremont Community	\$739.12
University Prep and Hawthorne Elementaries - Summer Academy for Water Quality	\$500
Dearborn Park Elementary - The Children's' Forest	\$600
Project Wild (Wilderness-Inner City Leadership Development) multi-lingual stencil's	\$1000
West Seattle Art-Nature Literature Festival	\$1000
Total	\$6,718.67

Anthony Matlock (206) 386-9746

6. KNOWN CHANGES IN WATER QUALITY

Based on the City's data, there were no known significant changes in the water quality of the City's receiving water bodies, as measured by chemical analysis.

7. STATUS OF WATERSHED-WIDE COORDINATION AND ACTIVITIES (S7.B.7a):

The City of Seattle is involved with the following groups to forward governmental coordination of projects and planning efforts.

Endangered Species Act Steering Committee

The City has formed an Endangered Species Act (ESA) Steering Committee to develop a responsible City strategy to respond to the legal requirements of the ESA and contribute meaningfully to the recovery of healthy runs of fish listed or potentially listed under the ESA. Four issue area groups report to the committee. A Legal and Political group, a Technical and Science group, an Operational group, and a Communications group focus and report on their respective issues. The Steering Committee consists of the leads from each of these groups, as well as representatives from the Law Department, Mayor's Office, Office of Intergovernmental Relations and Central Council Staff. Other departments represented on the Committee include SPU, City Light, Construction and Land Use, Parks and Recreation and Seattle Transportation. The groups are currently finalizing the committee's mission, goals and objectives, developing a work plan, creating a watershed-based approach to developing a recovery plan, and drafting a communications plan. Although the City has operations beyond the political boundaries of the City, including operations in Skagit, Pend Oreille, and eastern King County, this Committee's focus will be on the metropolitan area of Seattle.

Paul Fleming (206) 684-7626

Watershed Forums

The City of Seattle elected officials and staff have participated in all five local Watershed Forums (Green/Duwamish, Cedar/Lake Washington, Snoqualmie, Sammamish, and Central Puget Sound) in 1997 and 1998. The Forums are an outgrowth of the Regional Needs Assessment for surface water management, formed to address funding needs for primarily addressing the issues of restoring fish/aquatic habitat, protecting and restoring water quality and preventing flooding. In each watershed, projects have been identified and prioritized which address these priority areas. Funding for projects which reflect regional priorities is still under discussion. By creatively tapping some existing funding, some projects have gotten underway in the 1997/1998 time period.

The Forums are a unique opportunity for local governments operating within watersheds to coordinate, prioritize, and fund surface water needs, habitat restoration, water quality, and flooding. In addition, cooperative arrangements have resulted in studies and projects being undertaken with other entities including Port of Seattle and the U. S. Army Corps of Engineers.
Nora Smith (206) 233-7894

8. OTHER ACTIVITIES

Although not specifically required under the NPDES permit process, this program represents the City's proactive stance toward stormwater management issues and public participation.

Urban Creeks Initiative

A major effort was launched in 1997 that will integrate Seattle's ongoing efforts to manage urban watersheds. The City is committed to balancing its reliance on natural creek drainage systems to control stormwater runoff with the need to be good environmental stewards of those drainage systems. Seattle has developed an approach that is basin-specific and has the support of surrounding communities and other stakeholders. In several instances, grant funding has supported public education, citizen involvement programs, field studies, and restoration efforts in Seattle's creek drainage basins. These efforts will continue, with an added emphasis on coordinating and developing comprehensive strategic objectives.

Major priorities under the Urban Creeks Initiative in 1998 include determining appropriate staffing and funding levels, and identifying critical environmental/habitat issues in urban creeks. An Urban Creeks Coordinator position has been established to coordinate creek programs and development work, which include key creek restoration projects conducted as part of the City's upcoming Millennium celebration. A reporting process to document accomplishments and to track progress on major creek projects is being developed.

Terry Kakida (206) 615-0507

If you have any questions concerning this report or pertaining to the City of Seattle's Stormwater Management Program, please contact Robert D. Chandler by phone at 206-684-7597 or by e-mail at robert.chandler@ci.seattle.wa.us.

Megan White
September 1, 1998
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I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for willful violations.

Sincerely,



Timothy Croll, Director
Resource Planning Division

TC/RDC:jpp

cc: Ann Wessel, Washington State Department of Ecology
Cynthia Hickey, King County Department of Natural Resources
Robert Chandler, Seattle Public Utilities
Darla Elswick, Seattle Public Utilities
Cheryl Paston, Seattle Public Utilities
Neil Thibert, Seattle Public Utilities
Theresa Wagner, Seattle City Attorney's Office
Sharon Metcalf, Seattle City Attorney's Office

